

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application.

COMPLETE LISTING OF THE CLAIMS:

Claims 1-24 : (Canceled)

Claim 25 : (Currently Amended) A method of transmitting information from a start node through a plurality of intermediate nodes to a target node in a wavelength division multiplex optical communications network, each node including a wavelength selective optical cross-connect, the method comprising the steps of:

configuring the cross-connect at each of the start node and the target node with a plurality of switching matrices for switching wavelength channels, the cross-connect at each of the start node and the target node having only a single switching matrix being operative for switching a wavelength channel of each single wavelength, each single wavelength channel being switchable by only the respective said single switching matrix;

applying two wavelength channels having two wavelengths that are different, but modulated with the same information, to different respective switching matrices of the cross-connect at the start node;

transmitting the two applied wavelength channels with the different wavelengths via the plurality of nodes passing through different respective switching matrices of the target node; and

extracting the two transmitted wavelength channels from different respective switching matrices of the cross-connect at the target node;

modifying the wavelength of at least one of the two wavelength channels at a cross-connect of one of the intermediate nodes;

dividing the wavelengths transmissible in the optical network into at least two groups; and

selecting the wavelengths of the at least two wavelength channels from different ones of the at least two groups, each wavelength modification of one of the two wavelength channels at the cross-connect of the one intermediate node occurring between the wavelengths of a same group.

Claim 26 : (Canceled)

Claim 27 : (Canceled)

Claim 28 : (Currently Amended) The method according to claim 25, and jointly defining the routing paths of the at least two wavelength channels by a central network controller operative for choosing the two different wavelengths for transmission between the cross-connect of a last intermediate node and the cross-connect of the target node.

Claim 29 : (Canceled)

Claim 30 : (Previously Presented) The method according to claim 25, wherein the transmitting step is performed by transmitting the two applied wavelength channels with the different wavelengths via different paths.

Claim 31 : (New) The method according to claim 25, and routing the at least two wavelength channels via different cross-connects of the intermediate nodes between the cross-connect of the start node and the cross-connect of the target node.